

RAINBOW

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AT SCHOOL AND HOME

IT SPEAKS FOR ITSELF

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NEW YORK, JANUARY, 1891.

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PLAIN TALK.

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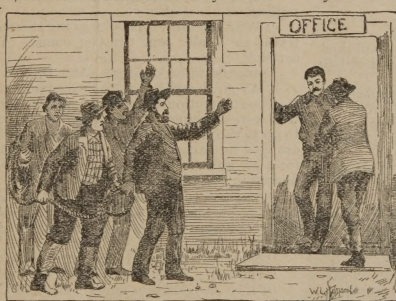
IN THE PINE WOODS.

EVA C. GRIFFITH.

"JIMINY, what's up?" exclaimed Dick Herndon, jumping out of bed and running to the window that opened out of the loft where he was sleeping.

"Something more'n common, I guess," said Jim Burton, his bedfellow, following his example. The two boys peered cautiously down on the scene below. It was a little loading station deep in the heart of the pine woods of Wisconsin, and the bright moon peeping from behind a cloud shone down on a tiny box of a depot, a small building serving as hotel, post-office and store combined, three saloons and the long rude building where the boys were, all built of yellow pine. These buildings were in a little clearing on one side of the railroad track; on the other side and all around the buildings was dense dark forest.

The building where the boys were belonged to the Blue Creek Lumber Co., and the road that went by it into the



forested led to their logging camp some three miles distant. The front part of the lower story of the building was used by the company as an office on pay days, the back part had formerly been used as dining room and kitchen, while the loft where the boys were, was furnished with cots and bedsteads for the loggers whenever they needed to do so. A party of men had been sent down from the camp that day to attend to loading some cars, and as the work was unfinished, they had remained over night.

The boys had gone early to bed and to sleep, but most of the men had gone into the saloons and it was from this direction that the noise came which had aroused the sleepers. As the boys reached the window they saw a party of men coming from one of the saloons, howling, cursing and gesticulating in a wild and threatening manner. They were dressed in the rough suits usually worn by loggers, and their faces, inflamed by drink and anger, wore a fierce, cruel look. Their leaders were carrying a long heavy rope with which they were evidently about to do something.

"Hang 'im," "Let 'im swing," "We'll teach 'im," were some of the words that fell on the ears of the frightened boys, who cowered down and looked through a knot hole that they might see and not be seen.

"I wonder who they're after?" whispered Dick as the rough men approached.

"Dun'no, guess 'tain't neither of us," answered Jim.

"Come out 'ere Jack, you're wanted," called one of the men, and then the boys knew that it was Jack Foster, who was even then quietly reading a book by the light of a smoky lantern in the office below, that was wanted.

"We'd oughter try and save 'im," whispered Dick; "he's been good to us."

"What ken we do?" asked Jim; "they'd kill us'n no time if we peeped. They're crazy drunk every one of them."

By this time the men had brought out Jack Foster and were tying his hands behind him. He was a pleasant faced young fellow of twenty-three or four, large, strong and muscular. He had only been in camp a few weeks and incurred the ill-will of the men by refusing to work on Sunday or to drink with them, and also because they imagined the company were partial to him.

"Now you own up," said the ring-leader, a desperate-looking fellow of small stature, known in camp as the Little Giant; "you've been a settin' the company against us; you're a sneak and you've got to come and drink with us or we'll do you up."

"You are mistaken boys, I've never wronged you, but I can't drink," faltered the young man with a pale face.

"Bring on the rope," shouted the Little Giant.

"I can't stand this," whispered Dick to Jim, jumping up and beginning to dress; "I'm going to do something."

"I'll run for Mr. James, I believe," said Jim, following Dick's example.

"I'll tell you," said Dick; "you're the fastest runner, so you go for Mr. James and I'll sneak around and see if I can't do something to hinder 'em till you get back."

"All right," here goes," and down stairs they went two steps at a time, then Jim bounded away into the forest, along the corduroy road that led to the camp, while Dick went around the house, threw himself down on all fours and crept up near the men but hidden from view by one of the large black stumps that were thickly scattered about. The men were disputing as to where the hanging should take place. After a few minutes it was decided that Jack should be hung from the high railroad bridge that spanned the deep ravine at the bottom of which was Blue Creek.

Little Giant led the prisoner in that direction, tossing the rope to a man near him, who instead of picking it all up caught hold of one end and ran shouting down the hill toward the bridge with the rope dragging after him. The rope passed very near to where Dick was hiding and quick as a flash he out with his jack-knife and gave it two or three



cuts, severing several strands but not cutting it in two.

"It'll be a cold day when they hang a man on that rope," he muttered to himself then putting his knife in his pocket he slouched his hat over his eyes and joining the crowd began shouting with the rest.

Arrived at the bridge the men divided, a part of them taking the prisoner under the bridge, while the others went above with one end of the rope to throw it over the iron frame work that formed the upper portion of the bridge. It took considerable time to adjust the rope to their liking and when all was ready and the word was given to "pull away", lo, the rope broke before poor Jack could be lifted from the ground. One of the men who had been a sailor came forward to splice the rope, and while the attention of all was attracted to him, Dick managed to edge around near to Jack and whisper to him:

"Jim is gone for Mr. James, they'll be here purty quick. 'Twas me cut the rope so's to delay 'em."

"God bless you boy," answered the young man a gleam of hope lighting up the dogged expression of his face. It was worth something to have a friend in that dark crowd even though it was only a boy.

Dick mingled with the crowd again and watched them mend the rope with pretended interest, but before they were ready to re-adjust it he had managed to back up against it and cut it in another place with his hands behind him. Again the word was given to pull away and again the rope broke. A volley of oaths greeted this catastrophe and then cries of "Shoot 'im," "Drown 'im," "Knock 'im in the head," were heard on all sides.

"Shooting is too good for 'im," said the little Giant; "he's got to hang, for he's a sneak, where's that chain we had this morning?"

"I'll get it," says Dick; "where is it?"

"In the back office. Be quick now."

Dick started off on a run, found the chain and had just time to slip it into the front office behind the desk, when two men who had followed him came up.

"Why where did he say it was?" asked Dick innocently looking under tables and chairs with pretended alacrity.

"Ain't it there? Let me look?" said one of them.

They hunted the back office over and were about to search the front office when Dick called out.

"Say, ain't it in the wagons? we had it out there this morning you know?"

"Maybe it is."

They all ran out to the wagons and searched them over then returned and researched the back office, then the front office and finally found it under the desk where Dick had put it. By the time the men had reached the bridge with the chain, half an hour or more had been consumed since Jim's departure and Dick began to cast expectant glances down the dark road from whence Mr. James would come. The chain was soon fastened to the rope about Jack's neck and again the men went up on the bridge to throw the end over one of the iron braces. Dick racked his brain to thing of something else to delay them.

"Say, Little Giant," he called out desperately as he saw the chain going over the brace, "ye d'orter give Jack time to say his prayers, he'll never git another chance ye know."

"Say 'em quick then," said Little Giant half pausing before given the word to pull away.

"Make 'im kneel," shouted some one while a large man near Jack, caught him by the shoulder and threw him to the ground on his knees. Jack was only too glad to kneel, for his strained ears had caught the distant rumble of cart wheels on the log road and perhaps a moments' delay meant life to him. Dick too, had caught the distant sound and knew by it that Mr. James was in the hollow and would be on the scene in a few minutes more. His heart beat loudly but hope and courage inspired him and he determined on a desperate move. While Jack was praying he crept along the frame work of the bridge till he could reach the chain which hung loosely while the men waited. Taking strong hold of it with both hands, with a quick movement he jerked it from the hands of the men who held it and catching hold of the end as it slipped through his fingers he jumped with it into the middle of Blue Creek some thirty feet below.

A howl of rage from the excited men greeted this unexpected movement, and they all rushed to the bank of the

Creek to take vengeance on Dick when another shout suddenly distracted their attention.

In the meantime, Jim who was a good runner, had started down the forest road with long swinging strides and was soon out of sight and hearing of a little station. The tall forest trees cast their shadows entirely across the road so that he could only tell his way by looking up to the tops of the trees where he could see the moonlight in the open space above him.

In the distance he could occasionally hear the barking of a wolf, the snarl of a species of wild cat or a mournful hoot of an owl, mingled with the chirping of a tree-toad that had come out before his time in the warm air that presaged of spring. The intense darkness made all these noises seem louder than usual and Jim shuddered with a nameless fear, yet he pushed on with all his might. The rough logs of the corduroy road hurt his feet and his legs ached with the strain long before he reached the camp but he hurried on just the same. At last he saw ahead of him a little star of light which he knew was the watchman's lantern at the camp and knowing that he was nearing his journey's end he put forth all his strength and ran shouting at every step the last quarter of a mile.

Mr. James who was one of the proprietors of the Blue Creek Lumber Co., and was just then acting as foreman of the camp, was sound asleep in the cabin, but his dog Bose aroused by the unusual outcry started up with loud barks and succeeded in waking his master by the time that Jim ran breathless to the door.

"They are killing Jack Foster," he shouted as Mr. James opened the door, "come quick they're all drunk."

"Who are killing Jack Foster?" asked Mr. James hastily pulling on his clothes.

"Why the men. They're going to hang 'im and Dick's tryin' to hinder 'em till you come. They're all crazy drunk."

Confound those saloons. Here Bill get a horse quick."

"Ay sir," said Bill as he dashed out to the stables.

The commotion had already awakened the rest of the men who were dressing in haste, lighting lanterns and preparing to go to the station to see the outcome of the affair. Jim dropped into a chair as soon as his message was delivered and for a few minutes gave no answer to the volley of questions poured in upon him on all sides.

"The boy is about bushed," said Mr. James noticing his pale face; "here take some brandy to freshen you up a bit." And he offered him a flask which he had taken from his trunk.

"No thank you," said Jim; "I never drink."

"Oh take a little, boy, just to keep you from fainting."

"I'll be all right in a minute, sir, and I'd rather not take it if you don't mind."

"All right." And sure enough by the time the cart was ready Jim was ready for another run.

They jumped into the two wheeled vehicle and were soon bouncing away toward the station. The horse fairly flew over the rough road and sent the cart bumping up and down so that the three who were in it, Mr. James, Bill, and Jim, had to hold on with all their might to keep from being thrown out. They reached the station and the top of the hill where the office and hotel stood just as Dick made his dizzy jump. A minute more and they were at the bank of the Creek.

"Here, what are you fellows doing?" shouted Mr. James, jumping from the cart and dashing among them with a loaded revolver in each hand. At sound of their employers voices the men paused and when they saw the deadly weapons he held they beat a hasty retreat. He ordered them to the office and most of them obeyed, though a few of the leaders skulked into the woods or the saloons.

Bill hastily undid the rope and chain from poor Jack's neck, while Jim clambered down the steep bank to see what had become of Dick.

The water in the Creek was not more than hip deep and as Dick could swim he was in no danger of drowning any way. But the high jump had sent him splashing into the mud and water head foremost; so he was spluttering at a great rate trying to catch his breath when Jim got to him. With his help, however, he soon scrambled out on dry land without serious hurt.

When relieved from his awful strain Jack Foster had, at first, been too weak to stand alone, but a little water on his head had relieved his faintness and in a few minutes Bill helped him into the cart and took him up to the office where Mr. James and the boys soon followed him. Mr. James discharged the ring leader on the spot, and the rest of the men he ordered back to the camp at once.

"Well boys," he said to Dick and Jim after the men were gone; "you've done Jack a good turn and saved the company a mighty unpleasant piece of business. We'll see in the morning what we can do for you."

"I shall never forget what they've done for me," said Jack warmly.

The boys didn't want a scene so they hurried away to bed muttering something about not wanting to be thanked. But a few weeks afterward they each received a handsome present from the Blue Creek Lumber Co., while Jack Foster was their firm friend forever after.

"Shorthand."

ONE of the greatest blessings of the nineteenth century is the art of shorthand. It is now being taught in every business college in America and in nearly every town private classes are being formed to acquire it; while there are colleges which give you instructions in the art at your house by means of the mail. With all these privileges for learning it, there is no excuse for any young man or woman who "would like to learn" and does not do so.

There can be no better mental trainer than shorthand and if the art is not applied as a financial aid it serves as an excellent amusement, pastime, or it can be called an accomplishment. The mental faculty which is strengthened more than any other in acquiring shorthand is the memory, as it is brought into use at the first and employed more and more as one advances.

"Were the operations of those who are professionally engaged in exercising this art to be suspended but for a single week, a blank would be left in the political and judicial history of our country, an impulse would be wanting to the public mind and the nation would be taught to feel and acknowledge the important purposes it answers in the great business of life."

The reason there are so many persons who have begun to learn stenography and stopped disgusted is that they either did not thoroughly learn the first principles or else they studied the wrong system. Every college seems to be getting up a system of its own, different from any other, until we now have over fifty different systems of stenography. It is hard to tell which is the best system, though the fact that the largest business college in America (The Bryant and Stratton of Chicago) teaches the Graham system exclusively seems to me to show it is superior to any other. I understand the Graham's system of standard stenography is more extensively used in the colleges of the United States than any other. The Graham system is harder to learn than any other, and it takes more time.

Shorthand is now taught in many of our principal public schools and it is not unlikely that it will in a few years be taught in all the public schools over the land, the same as any other study.

By all means learn shorthand, you will never regret it and if you never find it necessary to use it as means of financial help you can feel that the mental power obtained in acquiring it more than recompenses for the time spent.

A STENOGRAPHER.

Sabbath Day Music.

THE Oliver Ditson Co., Boston, have recently issued a handsome folio of "Sabbath Day Music," being a collection of standard melodies revised and arranged for the piano by Leon Klach. The work is much above the average of such collections, and is well worth examination by any player who is looking for anything in its line.

Music for the Young Folks.

"STORIES in Song" is the name of a jolly little volume of music for singing to small people, just issued by the Oliver Ditson Co., Boston. It is designed for use in the kindergarten, at home, and at school, and will be warmly welcomed by all who have the care of children.

The Papers Say So.

MRS. HENRY WARD BEECHER has numerous offers for a life of the gifted preacher, but her health is too poor to permit of the task.

Miss Alice Longfellow daughter of the poet, is a fine amateur photographer, and has made a specialty of storm pictures taken along the Massachusetts coast to illustrate a new book of sea songs which will soon be issued.

Mrs. Wm. G. Choate, of New York, started the first Woman's Exchange for the sale of the handiwork of poor gentilewomen. There are now in different cities one hundred such exchanges, all modelled after the first.

The Misses Stewart, three Scotch women, started two years ago, a temperance restaurant in the Chamber of Commerce, Cincinnati. If they did not furnish beer, it was predicted that they could not make it pay. But their good cooking has proven so attractive that they now clear annually from \$8,000 to \$10,000 besides paying a rent of \$3,000 per year.

Mrs. Ida J. Burgess, one of the gifted figure painters of the Chicago Society of Artists, is decorating the ceiling in the ballroom of Mrs. Chief-Justice Fuller's Chicago House. The style will be after Louis XIV., in garlands of roses interlacing each other, the design radiating from the centre. This is a new departure, and the work of the daring artist is being watched with interest.

Fashion Notes.

GRAY and black in the same styles make elegant traveling and street costumes.

Sleeves are without exception high and roomy enough to be comfortable and frequently of a different material.

Little girls' hats have broad brims and strings of very broad, soft silk, hemmed for finish. They have a cap quilting, set above the face, where they rest on the hair.

Spanish shapes for older girls have the straight all-around brim, upturned, and almost as high as the crown. They are trimmed at the front and the back with rosettes of speckled ribbon. Some have two folds of soft, red silk under the brim, as if there were a handkerchief tied around the head, and two red pompons above.

French bonnets of white and black are by far the most favorite combination. A pretty white velvet hat is trimmed with blackbirds; a most becoming little bonnet, formed of kilt pleats of white velvet, is bordered with a flat ruche of black ostrich feathers; and a very costly hat of black velvet has the crown covered with "antique" white satin, an expensive novelty.

Fringe is in mode again; chenille is largely used in its construction. Even fringes made for the most part of silk cord have the cord mixed with chenille. Velvet ribbons are much used for trimming plaid, and other wool dresses.

For general wear, black cashmere stockings are still preferred, but for dress occasions beautiful effects in silk and lisle are shown.

"Tea gown" is slightly *passee*, and house gown, a more sensible term, is what the lovely robes for home wear are now called. Wools in delicate shades, silver gray, pale rose and light blue, are the preferred material, and a train, just long enough to lie gracefully upon the floor, is indispensable.

For dressing the hair, a small knot or coronet at the top of the head, or a simple lift made by putting a cushion under is worn with either a knot of plaits or a loosely waved Grecian twist far down at the nape of the neck. This style gives opportunity for women, to whom the flat style on the head is not becoming, to wear a Japanese comb or some curls, pulled through the top-knot. The waved hair which is crimped nearly all over the head, admits of combing in a variety of styles, none of which are at all conspicuous.

THE *Express* receives a youths' magazine called PLAIN TALK, published monthly at No. 5 Beekman Street, New York, which we consider one of the best young people's magazines extant. It is brimful of interesting and instructive matter, from cover to cover, and should be read by every young person in the land.—*Express*, Winters, Calif.

GAMES AND PASTIMES.

Contributions for this department are solicited in regard to every variety of indoor and outdoor amusement.

The Word Building Contests.

AS the contest for the World Type-writer does not close until the 10th of this month, of course no report can be made of the result until the February issue.

We announce another contest and the word selected is **TRANSQUANTAIN.**

Note this particular: Hereafter all prize papers must be sent to GEO. D. THOMAS, 14 High Street, Waltham, Mass., who is to have charge of this contest.

The rules governing the contest are as follows:

1. Only subscribers can compete but any one may send their subscriptions in with their list of words.
2. Proper names will not be allowed, and only words found in the body of Webster's Unabridged Dictionary, which will be considered a final authority in deciding all disputed points.
3. Prefixes, suffixes and abbreviations will not be counted, nor will plurals be allowed.
4. Words marked "obsolete" will not be counted, unless they are still current in some one of their meanings.
5. Words of different meaning, but spelt the same, count as one word.
6. Words of the same meaning, but spelled differently, count one word for each spelling, unless one is obsolete.
7. No letter can be used more than once in the same word unless used more than once in the word or words used as a basis of the contest.
8. All lists must be written in ink (or on a type-writer) and must be alphabetically arranged, and the words numbered consecutively.
9. The full name and address of the contestant must be written at the top of the first sheet, and also the word used as the basis of the contest.
10. In case of a close contest, the number of errors and the general neatness of the work will be taken into consideration in awarding the prize.

The first prize will be \$2.00 worth of our "Books That Tell How," and the second prize \$1.00 worth from the same list. No third prize will be awarded in this contest.

The contest will close February 10th, 1891, and the result will be announced in the March issue.

Look out for a valuable prize to be offered in the next contest.

Pronunciation Contest.

APPOINT the time for holding the contest two weeks in advance, outlining your plan.

2. Appoint a leader, instructing him to prepare a list of about two hundred common words.

3. Use words admitting of only one pronunciation, unless one be a noun as sometimes used, at other times an adjective. When such is the case, state which is meant.

4. Use practical words.

5. Select two captains or leaders, and let them choose sides.

6. When ready for the contest, let the leader spell a word asking No. 1 of the first division to pronounce it. If a failure is made he forfeits his place and is seated, and a new word is given to No. 1 of the second division; and so on. The victor is the one who remains standing longest.

7. Let each have an equal chance; i. e., do not require one to withstand an opposing side of four or five.

Some Fun with Figures.

NEARLY every one likes to be thought "good at figures." Here are some interesting numerical amusements.

MIND READING.

To ascertain a number which has been thought of, request to multiply the same by 3, and ask if the product is even or odd. If odd, have one added before ordering to take half of it (to avoid fractions.) Request then the last result to be again multiplied by 3, and ask again if the product is odd or even. In the former case request 1 to be added, before ordering to take half. Ask then how many times 9 is contained in this half sum. The answer multiplied by 4 is the number thought of, in case both products were even. If the first product was odd, add one; if the second was odd, add 2; if both were odd add 3 to the last result, to arrive at the chosen number.

Example:

$$11 \times 3 = 33, 33 + 1 = 34; 17 \times 3 = 51 + 1 = 52,$$

$$9 \div 26(2, 2 \times 4 = 8, 8 + 3 = 11.$$

SECOND SIGHT.

To tell the figure which has been erased, request to write down a number of any size and to subtract from it the sum

of the figures contained therein, then to erase any figure from the result, and to announce the sum of the remaining figures. The erased figure is easily found by deducting the given sum from the next highest multiple of 9.

Example:

$$\begin{array}{r} 7235 \\ 17 \\ \hline 7218 \end{array} \quad \begin{array}{r} 2 \times 9 = 18 \\ 16 \\ \hline 2 \end{array}$$

LIGHTNING ADDITION.

To add at a glance several lines of figures, request the setting down of four lines of figures and write under these three more lines, which must be so constructed that each figure of the three lines gives nine, if added to the corresponding figure of the first three lines. The sum is easily arrived at, since it differs from the fourth line of figures only in that a three is taken from the unit figure and placed in front.

Example:

$$\begin{array}{r} 6231 \\ 4829 \\ 3261 \\ 3 \dots 8576 \dots 3 \\ 3768 \\ 5170 \\ 6738 \\ \hline 38573 \end{array}$$

SUM AND DIFFERENCE.

To find two numbers by knowing their sum and difference, add sum and difference and take half, which is one of the numbers thought of. The other is easily obtained by subtracting the number found from the given sum.

Example:

$$\begin{array}{ll} \text{Sum, } 26: & \text{Difference } 12: \\ 26 + 12 = 38; & 19 \text{ and } 7, \text{ answer.} \end{array}$$

RIGHT OR LEFT.

To ascertain in which hand are held an even or odd number of coins, etc., request that the number in the right hand be multiplied by 3, and the number in the left hand be multiplied by 2. If the sum of these products is even, the even number is held in the right hand, if odd in the left hand.

Example:

$$\begin{array}{ll} \text{Right, } 5; & \text{Left, } 8: \\ 5 \times 3 = 15, & 8 \times 2 = 16, 16 + 15 = 31. \\ \text{Answer: Even number in left hand.} \end{array}$$

FAVORITE FIGURES.

To produce a result which will be composed exclusively of any given figure multiply the number 12345679 by the corresponding multiple of 9.

Example:

$$\begin{array}{r} 12345679 \\ 7 \times 9 \dots 63 \\ \hline 37037037 \\ 74074074 \end{array}$$

$$77777777$$

A DIFFICULT SUM.

To arrange the nine significant figures in numbers which give added 100, it is necessary to make use of common fractions. The sum of all digits being 45, the subtraction of 5 units and corresponding addition of five tens would produce 90, while the subtraction of 6 units and addition of six tens would result in 99.

Examples:

$$\begin{array}{r} 98 \\ 1 \\ \hline 3-6 \\ 27-54 \\ \hline 100 \end{array} \quad \begin{array}{r} 87 \\ 5 \\ 4 \\ 1 \\ \hline 3-2 \\ 9-6 \\ \hline 100 \end{array}$$

MENTAL PEAT.

To decide mentally if the result of any multiplication is correct, apply the "Nine Proof" to the given numbers. The wrong answer will not correspond with the proof-figure.

Example:

245	. 2
724	. 4
980	8
490	
1715	
177280	. 7

GAME OF FIFTY.

Who can complete the sum of 50 by alternately putting down one of the figures, 1, 2, 3, 4, 5, 6, 7, 8, 9? To win this game aim to reach the partial sums of 10, 20, 30 and 40.

Example:

3	
7	. 10
8	
2	. 20
5	
5	. 30
9	
1	. 40
1	
9	
50	

The Mathematical Catch.

To the Editor of PLAIN TALK:

AN article appeared in your last issue, entitled "A Mathematical Puzzle." As you say, "there is clearly something wrong" about it. To my mind, the following is a double proof of the location of the error, and the reason for it.

In the first place, you cannot multiply dollars by dollars. You can multiply five by five, or five dollars by five, but as for multiplying five dollars by five dollars, *that* can't be done; for, if we try to do so what answer do we get? The figures say twenty-five. But twenty-five *what*? Five times five dollars equals twenty-five dollars. Then what can five dollars times five dollars be equal to? Such a term as dollars *square* is certainly meaningless, yet it is obviously the only one which can be applied to our result. Imagining dollars *square* is about as bad as supposing a figure with four dimensions. We are acquainted with lines, surfaces, and solids—one, two, and three dimensions. Who can conceive of a form with four dimensions?

The figures are at first sight something of a paradox, but I think the process of factoring will clear the matter entirely. Let us express the "dollars" part in this way:

$$(a) 5 \times 5 = 25$$

and the "cents" part:

$$(b) 5 \times 100 \times 5 \times 100 = 250,000.$$

Our mathematical Friend (by pointing off two decimal places) now divides this last result by 100, and expects to get the same figures as in expression (a); whereas he still has an unaccounted for factor of 100 in (b). Naturally, his answer of 2500 is exactly 100 times too large to agree with his result in (a).

If this is not entirely satisfactory in the way of an explanation, let us for a moment drop practical mathematics and resort to pure theory. The result 25, in (a), is *dollars square*. In (b), the 250,000 is *cents square*. There are twelve inches in one foot. There 144 square inches in one square foot. There are 100 cents in one dollar. Then there are 10,000 *cents square* in one *dollar square*. Reducing our answer 250,000 *cents square*, we have our answer as in (a), twenty-five. Is not this conclusive?

CHARLES T. TATMAN.

Worcester, Mass., Dec. 16, 1890.

From the Winner of the Prize Lamp.

THE lamp has come, and I must thank you very much for it. It is far more handsome than I thought it would be.—Emma L. Hauck, White Plains, N. Y.

HOW TO DO IT.

Original contributions solicited for this page. Send sketches, no matter how rough with descriptions, and when possible, illustrations will be made.

How to Eat an Orange.

THE question how the apple got into the dumpling, agitated the mind of an English monarch, and how to eat an orange seems to puzzle a great many men, perhaps equally as wise as the king, and certainly with equal right to indulge in problems of domestic economy. Whatever may be said about the designs of nature in forming the skin of an orange it is certain it was not intended to be eaten in its natural state. As the shell of the nut is only made to hold the kernel, so the skin of the orange is only to hold the pulp and prevent the juice from escaping. Art may find uses for the skin, but mace is not nutmeg, and the skin and the orange are two separate substances, and to get at the latter properly is the question for solution.

It is no doubt the fact that oranges are not so extensively eaten as they might be, for the reason that so many find them difficult to get at. They are "mussy," and they require much ablation after eating. Tangerine and Mandarin families promise to be popular on account of their cleanliness and the ease and comfort with which they are partaken. We would not interfere for a moment with anyone's pet fancy, but there is one way of eating the orange which is perfectly clean and free from ordinary objections, and there is little or no handling with the fingers.

Cut the fruit on the equatorial line, thus bisecting all the sections equally. Then take a spoon and swoop out pulp and juice and convey them gracefully to the lips. There is in this way nothing lost, and when the eater is through there is nothing left but the skin. We have seen oranges emptied very rapidly, cut in this way, by squeezing the juice into the mouth but at the table, or in company, the way described above is far more graceful and has all the sociability of a cup of tea.

How to "Block" Sheets of Paper.

THE following will be of particular interest to such of our readers as are amateur printers, but others may also be glad to know the process. The "secret" has often been sold for from five or ten dollars.

Recipe.—Sugar, one-quarter pound; glue, two pounds; glycerine, one pound; linseed oil, one-quarter pound; aniline dyes, sufficient to color, or in the same proportion for a larger or smaller quantity.

Soften the glue by soaking in enough clean water to cover, one-half hour. Drain off well, then dissolve, by the aid of heat over a water bath. When melted, add the sugar and glycerine, stirring well. Add the dye (any color desired) until the shade wanted is obtained, after which the oil is well stirred in. Blue or crimson are preferred. A common two-quart oat-meal kettle (one kettle inside another) will make a suitable and cheap water-bath.

DIRECTIONS.—Apply hot, with a common paint brush. Jog up the sheets so that the top and right-hand edge will be perfectly even; that the composition may come in contact with every sheet; divide the pile into as many different tablets as desired, by a card (common blank or tag stock will do). A convenient thickness if from 100 to 150 sheets. Place a heavy weight on the pile, or apply pressure as convenient.

Apply the composition with a brush with a slow motion, in order that the heat of the brush may spread the substance evenly and neatly.

After an hour or more, a knife-blade passed below each card will separate the lot into neat tablets.

If the top sheet is soiled, strip it off, that the job may have a neat appearance when delivered.

It will be for your advantage to print a gummed label of your own to attach to the outside of the card, on each pad, as advertisement of your business.

I DO NOT want to lose such a bright and welcome periodical.—J. C. M., Boston.

LADIES' DEPARTMENT.

EDITED BY

Mrs. N. F. PERKINS, 108 W. 61st ST., N. Y.

Fancy Work.

MONK'S PUZZLE.

CAST on fifty stitches; knit fifty rows. Add fifty more stitches; knit fifty rows. Bind off fifty stitches knitting fifty more rows on the fifty stitches left on the needle. Join the bound edges together to form armholes. Crochet a scallop around the edge, fasten together in front with a ribbon bow.

Two hanks of Germantown yarn; rather coarse bone needles. This makes a warm, tight fitting jacket.

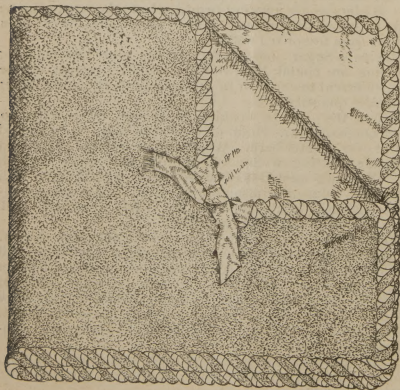
INFANTS' SOCKS.

Materials: one oz. of split zephyr; one set of fine needles.

Cast sixty-nine stitches on one needle, and knit backward and forward plain, twice each way making four rows in all.

First row.—[Knit two, over, k one, over, k two, sl. one, k two together, pass slip stitch over, repeat that from the first] in purling back, narrow on each end of the needle, repeat the whole, until you have five holes. After purling back the last time, begin again by throwing the thread over, sl. one, narrow, over, sl. one, n, and so continue each way until you have the leg as long as desired. Now make a row of eyelets, take off from each end twenty-three stitches, leaving twenty-three in the middle for the top of the foot. Continue the pattern on down, disregarding the side needles for the present. Take up eighteen stitches on the side needles, making in all forty-two on each side and twenty-three on the middle needle, knit backward and forward, on these three needles fifteen rows. After this narrow in every alternate row, at each end of each side needle, and on each side of the middle stitch on the middle needle; continue this until but two stitches remain on the middle needle. Bind off and sew up the sock. A narrow ribbon or a cord and tassel may be run in the holes at the ankles if desired.

SMALL HANDKERCHIEF CASE.



Take a piece of pale blue plush six inches wide, and thirteen inches long. Line with sheet wadding, under white satin, sprinkle sachet powder on wadding. Finish edges all the way around with heavy blue chenille cord, turn one corner over about three inches so as to show white satin lining, tack on blue ribbon bow. Double case and tack one end together.

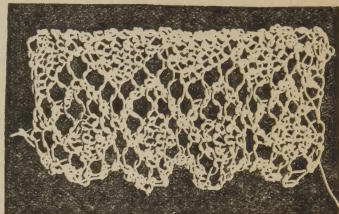
KNITTED NEWPORT SCARF.

With Saxony wool and coarse needles. Cast on one hundred and twenty five stitches. Knit back and forth in plain knitting until of the length required, then cast off.

Drop every tenth stitch and with the thumb and finger ravel through to the other end, crochet a row of shells across each end.—Mrs. A. E. S.

DIAMOND LACE.

Cast on nine stitches and knit across plain, first row knit three, narrow, over, narrow, over, knit one, over, knit one. Second row, and every alternate row knit plain. Third row, knit two, narrow, over, narrow, over, knit three, over, knit one. Fifth row, knit one, narrow, over, narrow, over, knit

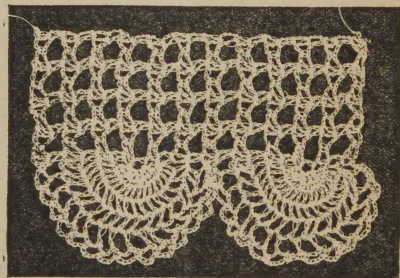


five, over, knit one. Seventh row, knit three, over, narrow, over, narrow, knit one, narrow, over narrow. Ninth row, knit four, over, narrow, over, knit three together, over, narrow. Eleventh row, knit five, over, knit three together, over, narrow. Twelfth row, knit plain, then repeat from first row.—Mrs. FULLER.

OPEN LACE.

Made of No. 30. Clark's O. N. T. Cotton.

Chain thirty stitches. First row, one d. c. in fifth stitch, [2 chain, one single crochet in next third st, one d. c. in next third st, one ch, one d. c. in same st,] four times; four ch, turn. Second row, one d. c. under one ch, [five ch, one d. c. under next one ch, one ch, one d. c. in same stitch,] four times; four ch, turn. Third row, one d. c. under one ch, [two ch, one single crochet in third st, of five ch, two ch, one d. c. under one ch, one ch, one d. c. in same place,] four times; four ch, turn.



Fourth row, like second row. Fifth row like third row. Sixth row, like second row. Seventh row, one d. c. under one ch, one ch, finish like third row. Eighth row like second row, but omit four ch at bottom, then fifteen d. c. under four ch, and fasten with s. c. in next four ch, four ch; turn. Ninth row, one d. c. [over, next double one ch,] fourteen times, one d. c. under one ch, one ch, finish this row like third row. Tenth row like second row, but omit four ch, then [two ch, one d. c. under one ch,] fifteen times; fasten with s. c. in next four ch, four ch, turn. Eleventh row, [one d. c. under two ch, three ch,] fifteen times; one d. c. under one ch, one ch, finish like third row. Twelfth row like second row, but omit four ch, skip first three ch, then three ch, one d. c. under next three ch, [four ch, one d. c. under next three ch,] fourteen times; fasten with s. t. under four ch, five ch, turn. Thirteenth row, one sin. crochet, under four ch, [five ch, one s. c. under next four ch,] fourteen times; the last five ch, put under three ch, three ch, one d. c. under one ch, one ch, finish like third row. Repeat from first row for length required.—Mrs. A. P. C.

CORRESPONDENCE.

The readers of PLAIN TALK are invited to write letters, ask questions of general interest on fancy work or housekeeping. Send directions for lace and fancy work.

DEAR READERS: I hope my long talk, about how I became interested in Geology did not tire you, and as I promised to tell you more about my collection, if you will walk into my parlor I shall be pleased to entertain you for a time. Here is a fine specimen of Coral Stone, I prize it very highly, it came from the Bahama Islands. See? It is in shape of a mound and so perfect in every way. If you notice, it is covered with a network like the finest embroidery or needlework. Here are two other specimens, from the same place, larger, but not so perfect in shape, but quite handsome. Then I have some bottles filled with small shells from the same island. In our great admiration for these larger specimens we must not overlook these little shells. See what delicate tints. Here is also a small Sea Horse, a piece of Float Stone, and a few other curios that are quite interesting to all lovers of nature. My Bahama friend informs me that the waters there are of the loveliest blue and green tints, and so clear that one can plainly see the bottom through eighteen or twenty fathoms of water. One part of the harbor there, called the "Sea Gardens," is very attractive to strangers, who sail there and then get in a little boat with a glass bottom, through which the loveliest garden of Corals, sea fans, feather sponges, etc., etc., growing in the greatest luxuriance may be seen, and each yacht takes a diver whom you may see dive and bring up any special object which you might point out. Then another very attractive feature of these gardens is to see fish of every color and size darting in and out among the vegetation. If you have enjoyed your visit and the specimens I have shown you, I will be pleased to show you another of my collections at some future time. I have lovely shells, minerals, fossils, corals, etc., etc., so come again.

NORA NORMAL, *Indiana.*

DEAR READERS: I wonder if we housekeeping mothers, with nothing but our homes and families to care for, are not far happier than women with missions and high aspirations. Just now the papers and magazines are discussing woman and her sphere, and quite a number of prominent people have written on the subject; and some of the writers are so positive that the time has arrived for women to take a place in the world, to stand shoulder to shoulder with man, and whatever work a man can do, a woman properly trained can do that work as well if not better. I have wondered if they really believed as they wrote, and if after a short trial of man's work, and a fair trial of pushing and struggling for fame and renown, if these very women would not gladly leave it all and return to house-work and home duties, cooking dinners, washing dishes and caring for the children. Let the woman who has no mission, no work to take her from her home, realize her great happiness and sing with the poet:

Stay, stay at home, my heart, and rest
Home-keeping hearts are happiest.

AUNT RUTH, *Boston, Mass.*

Exchange Column.

Exchange notices of not more than forty words inserted free to subscribers only.

MRS. F. M. TRIMBLE, Holbrook, Arizona, will exchange petrified wood for good reading.

Mrs. W. E. Walden, Watervliet, Michigan, will pay cash for a Town's Second Reader, not older than 1860, and in fair condition.

Mrs. Lu E. Brown, Silverton, Marion Co., Oregon, has knit lace to exchange for felt, plush or silk scraps for quilt.

Mrs. E. J. Claremont, Box 420, Athol Center, Mass., desires humorous articles for a scrap-book. Bill Nye, Mark Twain, or Lime Kiln Club preferred, will repay in postage stamps. Miss Mary Gough, Belair, Harford Co., Maryland, will knit Infant's Socks in exchange for nice pieces in silk, plush and velvet. Write first.

Mrs. J. H. Gossette, Salt Creek, Ind., will weave hair, watch-chains and charms from your own hair in exchange for woolen pieces for quilts or good books or magazines.

Mrs. Mary A. Laughlin, Independence, Kansas, has persimmon, castor beans, twenty-five kinds of flower seeds, bulbs of lillies, rare orchids, Cacti, seeds of the beautiful catalpa tree to exchange for articles of clothing for small children.

Our Cook Book.

WILL not each reader of PLAIN TALK send in her best recipe?

SUGAR COOKIES.

Beat two eggs, two cups of sugar, one cup of butter to a cream, add one cup of sweet milk, stirring constantly, flavor to suit taste, flour to make soft dough into which has been sifted two teaspoonfuls of baking powder. Roll it thin and bake quickly.

GINGER COOKIES.

Two cups of molasses, one cup of sugar, one cup butter, one teaspoon of ginger, one teaspoon of soda dissolved in twelve tablespoons of boiling hot water, and flour enough to roll nicely. Stir each article in well, and beat thoroughly.

FRUIT CAKE.

Two eggs, one cup butter, one cup raisins chopped fine, one cup currants well washed, one cup sweet milk, one cup molasses, two cups brown sugar, one small teaspoonful cloves, one teaspoonful cinnamon, two small teaspoonfuls baking powder sifted into two cups of flour, one half cup of citron cut fine.

PRUNE PIE.

Stew prunes very soft, remove the stones, sweeten to taste, add, for one pie, the well-beaten whites of two eggs, beat with prunes until thoroughly mixed and bake with two crusts.

PUMPKIN PIE.

Cut a pumpkin into cubes and stew until tender, when done press through fine colander, for one pie, take one cup of stewed pumpkin, one cup of milk, one egg, one teaspoonful of cinnamon, and one half teaspoonful ginger, and sweeten to taste with New Orleans molasses. Bake with one crust.

CRUST.—One cup flour, one-half teaspoonful baking powder, one-half cup thick cream, one-half teaspoonful salt, mix and roll thin.

DOUGHNUTS.

Four cups of flour, two teaspoonfuls baking powder, two cups of white sugar, two eggs, two scant cups of milk, half of small nutmeg, one even teaspoonful of salt, and two tablespoonful of melted butter, mix well, roll, cut in any shape desired, and fry in hot lard.

BEEF LOAF.

One and one-half pounds of raw beef, cut into small dice, one-eighth of a pound of fat salt pork, minced, one-half cup of crushed crackers very fine, one egg, one teaspoonful of salt, quarter teaspoonful of pepper, and one tablespoonful of butter, season to taste with minced or powdered sage, parsley or summer savory. Work the mixture up well in a chopping-tray and pack in a buttered bowl or mould. Cover very closely, set in a dripping-pan of hot water, and cook one hour and a quarter, replenishing the pan with boiling water as it evaporates. When done, take from the oven, press a closely fitting plate or saucer down upon the surface of the loaf, and set a flat iron on this. Let it stand thus all night. When you are ready for it, turn out and slice with sharp knife.

SALT.

For weak eyes, a wash of weak salt and water will prove of much benefit.

Salt and water, quite strong, and used persistently for a time, will prevent the hair from falling out. For stings or bites from any kind of insect, apply dampened salt, bound tightly over the spot, it will relieve, and usually cure very quickly. If the throat is very sore, wring a cloth out of cold salt and water, and bind it on the throat tightly, when going to bed; cover it with dry towel, this is excellent. For neuralgia, make a small muslin bag, fill it with salt, heat it very hot, and lay it against the aching place. It will prove a great relief, as salt retains the heat a long time. For catarrh snuff up considerable salt and water from the hollow of the hand; every morning. Salt and water, used as a gargle just before going to bed, strengthens the throat and helps to prevent bronchial troubles; it is also excellent for sore-throat.

If anything catches fire or something burning makes a disagreeable smell or smoke, throw salt upon it, at once. If a bright, clear fire is quickly desired, it may readily be obtained by throwing salt upon the coals—GOOD HOUSEKEEPING

• • PLAIN TALK • •

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PLAIN TALK will be stopped at expiration of subscription when the publishers are so requested, but unless so requested it will not be stopped. Subscribers will please note this fact. We have no desire to force the paper upon its readers, and a simple request to stop will be all that is necessary, but unless this request is received it will be continued.

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Entered as second-class matter at the New York, N. Y., Post Office.

NEW YORK, JANUARY, 1891.

MAY this New Year be a bright and happy one to every reader—a year full of work, and enjoyment and sport.

NOW that the holidays are past it is a good time to be looking out for stray subscriptions to PLAIN TALK. Any present subscriber may pay for his own paper one year by sending the names of two new subscribers with one dollar.

THE young people of to-day have occasion to congratulate themselves upon the fact that they are living in the best times this old world ever saw. Talk about the "good old times!" The present are better, and those to come will be better yet.

THERE is always "room at the top" in any profession or trade, or business. The trouble is that so many stop half way up the ladder. It pays to push ahead and strive for the best things. And youth is the time to make the right beginning.

MORE contributions are wanted for the different departments of this paper. Send in your letters, boys and girls, every one of you. Tell us of your school doings, of your pets, of your sports. Ask questions, propound problems, make use of the paper.

A Story of Pluck.

AN interesting story is told of a lad, who thirty years ago, at the age of three, was brought to one of the New York homes for destitute children. He was a winsome little fellow with curly hair and a bright eye, one that almost any mother-heart would cherish. No report was given of his parents. He seemed a forsaken, friendless child, just such an one as the home was instituted to provide for. Soon after he was placed with foster parents whom it was hoped would train him aright.

These people, however, lightly esteemed education, and made but small attempt to cultivate the mind of the child. They lived far from church and school, so that the boy had few privileges. He learned to read, but little more, and at the age of fourteen was a strong, healthy lad, well taught in farm work, but with very little book knowledge. He had, however, the capabilities within him, and had learned enough to whet his appetite for more, and to lead him to make strenuous efforts for self-improvement. By permis-

sion of his foster parents he secured a temporary home nearer than they were situated to the district school, where, by labor, and hard labor, too, morning and evening, he earned his board and the opportunity for study. Up before daylight every morning, he did a man's work before school-time, and then started on his long walk, so hungry that he had to eat his lunch in advance, and would have gone without at noon but for the well-supplied lunch baskets of his companions, on whose generosity he must fain depend.

In this way for several winters he struggled on, through difficulties which would have daunted many. One season he found a teacher who seemed to get a glimpse of the real grit and determination of the lad, and the contrary circumstances through which he was plodding. She encouraged him, told him of the self-made men of the nation and the world, and urged him to persevere. A friend in need is a friend indeed, and her kindness and counsels were appreciated.

When about sixteen he found a friend in a young clergyman, pastor of the church where he attended, who discovered his studious qualities, heard of his plucky endeavors to get an education, and resolved to aid him. He invited the boy to his house, gave him books to read, and especially interested himself in the formation of the Christian character which had just begun to develop. Learning his history, the clergyman came to New York, and urgently advised that he should be aided in his efforts to obtain an education. The home befriended him, material aid was advanced, and other friends were enlisted. The young man was placed in school, and from thence went forward through a thorough college and university education.

To-day he is filling a position of great usefulness and promise. From time to time the money received from the home and elsewhere, every cent of which he has considered a sacred debt, has been refunded, and to-day he stands free from pecuniary embarrassment. It has not been an easy path to usefulness and honor. A record of the hardships endured, the obstacles overcome, the trials of faith and courage encountered, would be a story worth telling to our boys.

Alaska Garnets.

IT WILL be of interest to persons who are fond of collecting mineral specimens to learn that garnets of fine size and color are found near Fort Wrangel, Alaska, and that specimens can be obtained by mail from that place at very moderate expense. These Fort Wrangel garnets occur in a tough gray slate, at the mouth of the Stachine river, a few miles distant from the Indian village at Fort Wrangel post-office. They vary in size from a pea to a walnut, and with care can be separated from the matrix in which they lie like plums in a pudding, and showing their polyhedral form of crystallization quite perfect. Many of these garnets display a very considerable depth of rich red color, approaching the ruby, and are hence of some value as precious stones.

Christmas Cantatas.

IT IS too late for use now, but we wish to allude to two particularly interesting Christmas cantatas issued by the Oliver Ditson Company, Boston. The first is entitled "Mary's Stockings or a Swedish Christmas," and requires but six characters, besides the chorus. The second is "Good Tidings, or the Sailor Boy's Christmas," and requires nine characters, besides the chorus. Both are simple, and yet attractive, and would form a good groundwork for an evening's entertainment.

A Popular Song.

ONE of the first poems written by the late John Boyle O'Reilly was entitled "The Old School Clock," and was composed while he was confined in Arbor Hill prison, Dublin. Francis Marsena has written the music for a waltz song, and F. L. Hodgdon & Co., Hyde Park, Mass., are his publishers. The piece is proving to be a very popular one, and will be mailed to any address for thirty cents.

THE ROMANCE OF SCIENCE.

How the Bessemer Process was Invented.

SIR HENRY BESSEMER, in a letter read at the meeting of the iron-masters in Pittsburgh, gives some details of his first trials:

"At the time of the Crimean War I had invented a mode of firing elongated projectiles from a smooth-bore gun, the rotation necessary to insure their proper position during flight being obtained by utilizing a portion of the powder gas to produce rotation by reaction, after the manner of producing rotation in turbines, and not by the rifling of the gun, consequently rendering all smooth bore guns at once suited for firing elongated shot or shell. I, of course offered this plan to our own Government, but it was discarded without a trial.

"A little after this period I happened to be on a visit for a week or two with Lord James Hay, at the house of his daughter at Paris. During this visit our host gave a farewell dinner to General Hamlin and several other distinguished officers in the French Army, who were going out to the Crimea.

"Among the guests on this occasion was Prince Napoleon and while taking a cigar in the library after dinner, the conversation turned naturally enough on artillery, and I then mentioned my system of firing elongated projectiles from smooth-bore guns. The prince was so impressed with the importance of this idea that he said he was sure that his cousin, the emperor, would be much pleased if I would explain my invention to him and that he would get an appointment made with the emperor for this purpose. This was done, and I had a long and interesting discussion with his majesty whom I found most thoroughly conversant with the whole subject of artillery.

"His majesty, in the kindest possible way, gave me a *carte blanche* to make any experiments I desired at Vincennes.

"After many hours' practice, on a cold December day, we retired to the officers' quarters in the old fortress of Vincennes, and while standing around a blazing wood fire sipping some hot spiced wine, Commandant Minie, the inventor of the rifle, observed that, 'although the rotation of the shot was effected, unless we had something better to make our guns of, such heavy elongated projectiles could not be used with safety.' This casual observation was the spark that has kindled one of the greatest industrial revolutions that the present century has to record, for, during my solitary ride in a cab that night from Vincennes to Paris, I made up my mind to try what I could to improve the quality of iron used in the manufacture of guns.

"My knowledge of iron metallurgy was, at this time, very limited, but this was in one sense a great advantage for me, for I had very little to unlearn, and so could let my imagination have full scope. After many months of trial and much building up and pulling down of reverberatory furnaces I cast a small model gun; the iron was very white, and, in turning it, little short curly shavings were cut off. It was wonderfully tough for cast iron, but wonderfully brittle if classed as wrought iron. The little model gun looked very beautiful when highly polished; and I took it to Paris and begged the emperor to accept it as the first fruits of my studies of the metallurgy of iron. He expressed himself much pleased with it, and complimented me on having achieved a step in the right direction, and with his own hands placed it in a bureau, saying: 'Some day it may become an interesting relic.'

"About this period I began to appreciate fully the fact that if I could improve cast iron and render it malleable, and still retain its fluid state, that, apart from its use for artillery, it would be of the greatest commercial value for all engineering purposes. I therefore pursued my experiments with greater ardor than ever, for I was convinced that I was on the eve of producing a quality of metal that would supersede wrought iron.

"At this time, I devoted myself exclusively to these investigations, which were very costly, and I became most anxious to obtain the opinion of some able engineer as to the value of my invention, least I might be deceiving myself and living in a fool's paradise.

"I consequently consulted Mr. George Rennie, the eminent civil engineer. I showed him a small upright fixed cylindrical converter and in it we made a charge of seven hundred weight of Blaenavon pig-iron into an ingot of malleable iron. Mr Rennie was in raptures with the result, and said: 'You must not keep this light under a bushel for a single day longer, and by-the-by, there is a first-rate opportunity for you. The British Association meets at Cheltenham next Tuesday; read a paper there by all means. I am president of the mechanical section; it is true all the papers are arranged, but if you will write a paper, I will take the responsibility of putting it first on the list.' He kept his promise, and I read my paper on 'The Manufacture of Malleable Iron without Fuel,' which appeared verbatim in next day's *Times*.

"The entire iron trade of the kingdom was startled by the facts detailed in this paper, backed as they were by two small bars of malleable iron, one of which had been piled and rerolled; a few days later the iron-masters came trooping up to London to see the new process. There are many interesting incidents connected with these visits, which I can not trespass on your time to relate; but some idea of the excitement may be gathered from the fact that, notwithstanding the imperfect state of the process at that time, I was actually paid twenty-seven thousand pounds for licenses granted within one month of the reading of my paper. At many iron-works the managers set to work to test the invention in the rudest possible manner, with such means as they had at their disposal, all of which attempts were failures. In my experiments I had used Blaenavon pig-iron, which was successful; and at that time I had no idea that other brands of iron would fail in the manner they did. No sooner were these failures known than an extraordinary revulsion of feeling was manifested, and the most perfect distrust of the invention became universal. The public press, which had spoken of it in such glowing terms, now condemned it as impracticable, and spoke of it as 'a brilliant meteor that had fitted across the metallurgical horizon, dazzling a few enthusiasts, and then vanishing forever in total darkness.'

"Prior to this invention, pure malleable iron in a fluid state was wholly unknown; indeed, whole days of exposure to the most powerful furnaces then in use entirely failed to bring this material into a state of fusion, notwithstanding which I proposed to convert ordinary melted cast iron into this malleable fluid state, in quantities of five tons at a single operation, and in the short space of fifteen minutes, by the mere chemical action of cold atmospheric air, and in the entire absence of any fuel whatever, except that which existed in the form of carbon and silicon in the crude metal itself. It is not surprising, therefore, that the iron-masters, as well as the whole press, joined in one general chorus of condemnation of what they believed to be a perfect chimera, which none but a wild enthusiast could have believed to be possible. I know far otherwise, but this was no time to argue the question. Words would have been of no avail, so I set earnestly to work to try and master the difficulty that had so unexpectedly arisen; this was no easy task."

Sir Henry goes on to tell of the anxious toils of month after month of disappointment, his best friends endeavoring to prevail upon him to desist, but he felt confidence in his plans and full belief in finally overcoming the obstacles.

"Happily for me the end was nigh, and in a few more months I had fully succeeded in producing steel worth fifty to sixty pounds per ton from charcoal pig-iron, which had cost me only seven pounds per ton, the conversion of the crude iron into steel being effected by simply forcing minute streams of cold atmospheric air upward through it for a space of fifteen minutes.

"Thus was the so-called fallacious dream of the enthusiast realized to its fullest extent, and it was now my turn to triumph over those who had so confidently predicted my failure. I could now see in my mind's eye at a glance the great iron industry of the world crumbling away under the irresistible force of the facts so recently elicited. In that one result the sentence had gone forth, and not all the talent accumulated during the last one hundred and fifty years of all the thousands whose ingenuity and skill had helped to build up the mighty fabric of the British iron trade—no, nor the millions that had been invested in carrying out the existing system of manufacture, with all its accompanying powerful resistance,

could reverse that one great fact or stop the current that was destined to sweep away the old system of manufacturing wrought iron, and establishing homogeneous steel as the material to be employed in future in the construction of our ships and our guns, our viaducts and our bridges, our railroads and our locomotive-engines, and the thousand-and-one things for which iron had hitherto been employed, and yet, with all this newly developed power, I was paralyzed for the moment in face of the stolid incredulity of all practical iron and steel manufacturers, which stood like the solid wall of a fortress, barring my way to the victory I had already won. I announced the fact of my complete success to the world, and held in my hands the most undeniable proofs of the truth of my assertion; but no one would now believe it possible. They remembered but too well the great expectations that were excited two years previously by the first announcement of my invention at Cheltenham, and were not again to be disturbed by the cry of 'Wolf!' Thus it happened that after the hard battle that I had fought so many years, I found myself as far as ever from the fruits of my labor, for not a single iron-master or steel-manufacturer in Great Britain could not be induced to adopt the process.

"Anxious to possess still further practical proofs of the value of my invention, I made a few hundred-weight of steel bars, at my experimental works in St. Pancras, of all the sizes and special qualities required in an engineer's workshop. These I took to the works of my friends, the Messrs. Galloway, engineers of Manchester; and, unknown to any of their work-people, these bars were given out and employed for all the purposes for which steel had hitherto been used in their extensive business. So identical in all its essential qualities was this steel with that employed by their workmen, that during two months' trial of it not the slightest idea or suspicion that they were using steel made by a new process was entertained by them; in fact, they were accustomed to use steel of the best quality, costing sixty pounds per ton, and they had no doubt whatever but that they were still doing so."

Sir Henry goes on to say that this tool-steel was made from pig-iron casting which was bought at seven pounds per ton and sold for forty-four pounds per ton. He soon made arrangements and entered into partnership with the Messrs. Galloway; they built steel works in the town of Sheffield and before long the other manufacturers were compelled to purchase licenses. He terminates his letter with the following very satisfactory paragraph:

"Some idea may be formed of its importance as a manufacture, when I state the simple fact that on the expiration of the fourteen years' term of partnership of our Sheffield firm, the works, which had been greatly increased from time to time entirely out of revenue, were sold by private contract for exactly twenty-four times the amount of the whole subscribed capital of the firm, notwithstanding that we had divided in profit during the partnership a sum equal to fifty-seven times the gross capital; so that by the mere commercial working of the process, apart from the patent, each of the five partners retired, after fourteen years, from the Sheffield works with eighty-one times the amount of his subscribed capital, or an average of nearly cent. per cent. every two months—a result probably unprecedented in the annals of commerce."—C.

PHILATELY.

ALVAH DAVISON, - - - - - EDITOR,
176 BROADWAY, NEW YORK.

MR. W. D. ACKER, of Poughkeepsie, N. Y. was in the City a short time ago in the interest of the philatelic directory which he proposes to get out.

At Mr. Casey's auction sale held on December 13th, Mr. H. N. Terrett secured about all the Canadian revenues catalogued, and I understand he got them at a very low price.

Mr. J. W. Scott will read a paper in the near future at the Brooklyn Club on the varieties of the 1851 United States stamps, and all collectors interested in that branch would do well to be present if possible, as the subject will be an interesting one.

The Brooklyn Philatelic Club makes an excellent showing in the line of its membership. In the course of two years there has been but one death and one resignation, and this in a membership of eighty. The club will have a spread next month at which both honeyed phrases and viands will be disposed of in unlimited quantities.

Mr. A. R. Rogers as auction buyer for the A. P. A. must give his patrons good satisfaction judging from the amount of orders entrusted to him. At a recent auction he had bids to the amount of three hundred dollars, and this is a slight indication of the quantity that goes out of the city from these sales, it being remembered that nearly all the dealers are also present with outside bids.

The joint work on the United States Envelopes which is being completed by Messrs. Tiffany, Bogert and Rechart is nearing completion, it now being in the printer's hands. As each set of proofs have to be sent to St. Louis it requires more time than if the compilers were together. The public will probably see the book in about three months, and the completeness of the work will no doubt compensate for the long delay in issuing it.

The *American Stamp* is a paper published by a firm with a big name, but if they expect to create any stir in the world they will need to enlarge it somewhat and get it out a little more promptly. In these days of large philatelic papers one which can only boast of four pages is sadly behind the times, and especially when such a good man as Dr. Mitchell is in the editorial chair.

In the last number I gave the names of the new Literary Board of the American Philatelic Association, but as four of the names were set up wrong I feel it my duty to reprint them. They are as follows: W. C. Stone, Chairman; S. B. Bradt, Business Manager; S. Leland, Robt. S. Hatcher and E. F. Gambs. I understand that Mr. Gambs, has declined to serve, in which case someone else will be appointed.

At the December 2nd meeting of the Brooklyn Club, Mr. C. B. Corwin exhibited a portion of his magnificent collection. He collects the specimens used whenever possible, and his albums are replete with gems of the first water. Shades innumerable were shown of each stamp, and all were of course perfect specimens and mounted in faultless order. It is a standing wonder how Brother Corwin can devote so much time to his stamps, and direct his large mercantile business.

Mr. William B. Hale of Williamsville, Mass., is always on the lookout for choice collections, and he lately struck something fine in this line in getting hold of a valuable collection formerly owned by George Woodward of Boston. The breaking up of these old collections gives the public an opportunity of obtaining many specimens which it is difficult to find in the stock of the dealers, and while not rare as regards the price, yet they are seldom met with until occasions occur such as I have mentioned.

The *Quaker City Philatelist* which has pursued the even tenor of its ways for some years has again changed hands, and this time Mr. Millard F. Walton the secretary of the American Philatelic Association will steer the craft. This paper, always very fine in its typographical appearance but small in the number of its pages, will I trust celebrate the change by coming out a little larger. The *Quaker City* as a stamp paper is numbered among the old standbys, it having reached an age attained by few periodicals of this class. In opening its sixth volume it will have the good wishes of many old readers.

Now that the *American Philatelist* has been re-established and the windy city has got the Board of Trustees and the Literary Board, the Western men who were so worked up over the affair can resume their composure. It was New Yorkers who killed the paper, and men from the same city who were the means of having it revived, so the account is square and as far as the paper is concerned the subject is settled. Now that the paper is again in the field let the members see that it does not suffer for the want of good material. Many think that the appointment of the Literary Board is all that is necessary for the conducting of the paper, but they should remember that this Board is but the committee of the Association, and that it is the members who should furnish the matter, while the board see that the paper is got out at the proper time and with the best obtainable material.

For some months past New York City has been in more or less of a stew between the warring factions of two parties. It was thought by those who love peace that the troubles would be all settled in the re-establishment of the *American Philatelist*, but this hope has proved to be a false one, owing to other matters which are directly traceable to the original quarrel. In an issue of the *Record and Review* Mr. R. R. Bogert made certain insinuations against members of the Official Board, and on these insinuations Mr. Corwin has preferred charges against him. In a later letter published in the same paper, Mr. Bogert withdraws the objectionable paragraph in order to avoid any trouble, and it would seem as if this were enough to settle the matter, but as the charges are being pressed, it looks as if some were more in favor of war than peace. We have some earnest peacemakers in the city, and they are making an effort to have the hatchet buried but with what success time only can tell.

A Prize for Stamp Collectors.

IN THE August issue the following appeared: "Another prize, a 'Youth's Companion' stamp album, handsomely bound in leather, or a package containing a set each of the Flags, Arms and Portraits of Rulers of the World (as the winner may choose) is offered for the best essay of not more than 500 words on 'What may be Learned from the Stamps of Gambia.' Anyone may compete—open to the world. Essays must be in before October 10th."

The first prize was awarded to Leon E. Joseph, 2639 Oxford Street, Philadelphia, Pa.

This month a prize is offered for the best essay of not more than 500 words on "The Stamps of Sarawak, and what may be learned from them." Prize to be announced later. Essays to be in by March 1, 1891. Open to everybody.

"What May be Learned from the Stamps of Gambia."

PRIZE ESSAY.

THE first time I got a Gambian Stamp, I naturally asked myself the question: "Where is Gambia?" I looked in a "Stamp album," and found that it was a British Colony, on the western coast of Africa, with an area of twenty-one square miles, and a population of seven thousand Colonists. The capital is the beautiful City of Bathurst, situated at the mouth of the Gambia River, 110 miles south of Cape Verde.

Jaloff, Laby, Pisanina, Futa, Funbo and Jalon are also important cities of this settlement. This Colony, familiarly known as Gambia to Philatelists (better known by the rest of the world as Sene-gambia) is situated 130° 41' North latitude, and 14° and 40' West longitude.

This settlement is blessed with one of the healthiest climates of Western Africa. It is bounded on the north and northeast by the Sengal river; on the west by the Atlantic ocean; on the south by the Scories river. The eastern boundary is not clearly defined.

Gambia's standard coin is one pound, which equals \$4.83 in our money, and twenty shillings in their money. One shilling equals twelve pence.

The Gambia River traverses the centre of Sene-gambia for one thousand miles and empties into the Atlantic ocean at Bathurst. The River Grande also flows through Gambia but is of less importance.

The first Gambian stamp was issued in the year of 1869. The Gambians have thus far had five issues of stamps in the following dates, 1869, 1874, 1880, 1886 and 1887. They were all of the same design, with some slight alterations, and some being perforated while others were unperforated. None of the Gambia stamps were perforated until 1880, but water-marks were first used in 1874. In 1874 the water-mark was the British crown and C. C. This same water-mark was again used in 1880, when the stamps were first perforated. In 1886 the water-mark was the same crown and the letters changed to C. A. It was repeated in issue of 1887. The design was the head of Queen Victoria of England, with "Gambia" at the top.

Having become deeply interested in this distant settlement on account of your giving it as the subject for us to write our essays, I hope to learn more about it later.—Leon E. Joseph 2639 Oxford St., Philadelphia, Pa.

London's Second Lady.

NEXT to the Queen the Londoner loves the Bank of England, or the "Old Lady of Threadneedle Street." The way this financial belle guards against the counterfeiting of her notes is interesting.

The paper for these notes, in which the water-mark is so conspicuous a feature and which is a silvery white, and so tough that it will sustain a weight of fifty pounds suspended from the corners, is made under the strictest guard in a private factory in Yorkshire.

Formerly the notes were signed by the assistant cashiers but owing to the increased issue the signature is now printed, which together with the printing of the notes is done at the bank.

The number, letter, date and denomination of each note is placed to its debit on a ledger account as soon as issued, the corresponding credit being filled up on its return to the Bank. Hundreds of these notes are frequently returned the same day issued, but not long ago a package of £1 notes issued in the middle of the last century was redeemed. As soon as returned they are canceled without regard to age. This is done by tearing off the signature, the number and date being first recorded in the receiving clerks' counter cash book. They are then assorted and their ledger credit filled, after which there are periodically burned. The lowest issue at present is £5; the highest £10,000.

To imitate the paper for these notes is very difficult. The printing is very plain and simple but some of the lettering has peculiarities not readily detected by the uninitiated and known only to the bank officials. Then the number, date letter and denomination must correspond to the ledger record.

All these difficulties require months of patient effort and research to overcome and when the perfect counterfeit is at last presented the chances are that the genuine note has already been redeemed and the account filled up.

It may pass among common people but seldom if ever is it successfully presented at the bank.—WILDER GRAHAME.

A New Series of Books.

OF making books there seems no end. Under the general title of "Good Company Series," Lee & Shepard, Boston, have commenced the publication of a monthly series of paper covered novels. The first in the series is "The Blind Men and the Devil," by "Phineas," a story with a moral if the reader only has patience to search for it.

The second is "In Trust or Doctor Bertrand's Household," by Amanda M. Douglas, and as a matter of course is interesting and entertaining. It was first given to the public some twenty odd years ago, but is none the less interesting on this account.

The third in the series is by William T. Adams (Oliver Optic), and is entitled "Three Millions, or the Way of the World." This is an old time favorite, also, being one of the author's earlier productions. It will interest the boys of the present generation, all the same.

The price of the volumes in this series has been placed at 50 cents each; or an annual subscription, good for twelve numbers, will be taken for \$5.

Stories of the Civil War.

THE above is the title of a book of which Albert F. Blaisdell is the author, or more properly the editor, and Lee and Shepard the publishers. It does not claim to be a history—"only a book of stories edited for school and home use." It is a good patriotic reader and speaker, both matter and style being alike worthy of recommendation. The price in cloth is but \$1.00, and an edition in boards is issued at 30 cts. We understand that many schools are using the work as a supplementary reader.

I AM pleased with the paper and the price.—W. W. K., Chicago.

DETROIT temperance women have struck root beer and soda water off their schedule. Only tea, coffee and water now.

NATURAL HISTORY.

Contributions to this department are solicited from all readers. Questions will be answered by competent authorities.

Mr. McGinty in Florida.

IT MAY be of interest to some of your readers to get acquainted with my pet otter, McGinty. Some four months ago two little negro boys put in an appearance at my house with a very small box containing a very young fish otter, offering the same for sale. A bargain was soon struck, McGinty transferred to my kitchen and turned out of his box. He looked and acted rather ugly, squalling like a baby, evidently he did not like his new quarters. An offer of a pair of raw fish was accepted with a snap that sounded like a steel trap closing. After various other things had been offered and rejected, I finally filled a spoon with milk and held it to his mouth. Snap! and down went the milk, a second and third spoon followed and all further trouble in the eating line was solved. McGinty is now about half grown: three and one-half feet long and rather heavy for his size. He has the full run of my house and lot, (seven acres) also the use of a small pond, in the weeds of the latter he sleeps and deposits all surplus bones for future use. Besides the fish and crawfish, which he catches himself, he will eat anything and everything. McGinty is quite tame and follows me like a dog, whenever I allow him to do so, and comes readily at call. He likes to play with dogs and I keep a little kitten for his special playmate.

McGinty does not know what fear is and will run at and chase off the premises any strange dog, no matter what size or kind. His favorite way of fighting is flat on his back, using his hind feet to rip up anything they strike; he has also a faculty of turning inside of his skin, so that a dog grabbing him by the neck will find himself bitten in the face or throat before he knows it. McGinty is a beautiful swimmer, as a matter of course. I have taught him to hunt up things thrown in the water and he will plunge in and bring a soda cracker, no matter how far it is thrown in the pond. This reminds me that he will not eat dry food, but will carry it to his water dish or pond and dip it in before eating. I have had many and strange pets, but McGinty beats them all, a verdict that is fully indorsed by all who have seen him.—*H. V. N., Earleston, Fla.*

New Form of Insect Cabinet.

THE case is of black walnut, and is made in two sections, one fitting on top of the other, the upper having sixteen drawers and the lower one having twenty-four, each drawer being 24x20 and of sufficient height to admit of the use of any ordinary pin. Each drawer slides in its own compartment, and is thus made interchangeable, and has a glass bottom and top, and is made dust tight, effectually preventing the intrusion of parasites. To place the cork on the glass floor a strip of tin is used one inch in width, and turned up on the sides five-sixteenth of an inch, thus leaving three-eighths of an inch for the cork. The strip of tin is two inches longer than the width of the drawer, and is turned up one inch and held in place by thumb tacks. To give it a neat appearance the tin may be covered with a strip of thin white paper. These strips of tin should fit the drawer nicely, and they can be moved to suit the width of the specimens upon them. The sides of the drawers should be made of some soft but well seasoned wood. With this form of cabinet the upper and under side of the insects may be studied without disturbing them. The cost of such a case is no greater than the expense of making one in the old style.—*The Observer.*

Ages of Animals.

A WHALE lives 300 years.
A cat lives fifteen years.
A tortoise lives 100 years.
A lion lives twenty years.
A camel lives forty years.
A bear lives twenty years.
A dog lives fourteen years.
A squirrel lives eight years.
An elephant lives 400 years.

Wonderful Trees.

THE following statements are compiled, from apparently reliable accounts of tree wonders: One tree of the Mariposa Grove, in California, is ninety feet in circumference; through another a roadway twenty-seven feet long and ten feet wide and ten feet high has been cut, yet the tree is still vigorous and growing. Columbia county, Georgia, has a quivering tree, every twig and limb of which however large, is constantly trembling as if in fear. A white mulberry of Newton, N. C., constantly emits puffs resembling smoke, which issue from every part of the tree. A tree of New Zealand catches birds in a sticky fluid given off by its seed vessels. The calabash tree of the West Indian has a fruit often twelve inches in diameter, with a hard shell that is made into dishes of various kinds, and may even be used over a fire for boiling water. A tree of the Nubian forests grows ready-made whistles, gals left by insects having holes through which the wind blows with startling effect. The vegetable wax tree of Japan bears berries from which fine candles are made. The stinging tree of Queensland is dangerous to the touch, but leaves no mark, through the pain is maddening, and the part stung is tender for months when wet. A palm of Pedur, India, eleven feet high changes its position morning and evening, a handkerchief tied to its leaves so as to touch the ground at 4 a. m., having been six inches from the ground at 5:30 a. m. eighteen inches at 8 p. m., and nine feet at 3 a. m. A leaf-stalk of the traveler's tree of Madagascar contains even in the driest season, a quart of water. Schelwisch, the Bavarian naturalist, found in the heart of Africa an iron tree, from which the leaves could be removed only by filing. Another African tree yields butter. An engineer who has been surveying in Central America, reports a tree which shines with a brilliant light at night, a tree which gives milk and a tree which bears dough for bread.

Well Up in Natural History.

A TEACHER was given a Natural History lesson. "Childred," she said, "you all have seen the paw of a cat. It is as soft as velvet, isn't it?"

"Yes, mum."

"And you have seen the paw of a dog?"

"Yes, mum."

"Well, although the cat's paw seems like velvet, there is, nevertheless, concealed in it something that hurts. What is it?"

No answer.

"The dog bites," said the teacher, "when he is angry, but what does the cat do?"

"Scratches," replied the boy.

"Quite right," said the teacher, nodding her head approvingly; "not what has the cat got that the dog hasn't?"

"Kittens!" exclaimed a boy in the back row.

Corals.

THE handsomest corals and largest quantity are secured on the Algerian coast. These coral grounds have been worked for about two centuries. Other extensive coral grounds are on the Spanish, Sicily, Corsican, and Sardinia coasts. Over four thousand persons are engaged in coral fisheries. Besides there are a vast number of Italians, French and Spanish boats engaged in the same occupation. The Italian fishermen are required to pay a royalty to the French government, for the privilege of taking corals on the Algerian coast. There are many coral workshops in Italy, many of which are in a small town at the foot of Vesuvius. There are nearly 10,000 people employed in the coral-working industry, mainly women and children.

Katy-Dids in Globes.

MANY people enjoy the quaint song of the Katy-dids as much as they do the notes of the canary, and love to hear them close by. Few people are aware that they may be kept in gauze cages or glass globes, and be fed on ripe apples or pears. Thus held in captivity these insect disputants will keep up their "Katy-dids" and "Katy-didn'ts" with the same frequency in the room that they do of nights in the foliage of the elm trees.

The Nesting of the Loon.

FOR many years I was impressed with the idea that the desirability of a set of Loon's eggs in one's cabinet was only equalled by the impracticability of securing them.

Being the largest of the water birds of southern Wisconsin, excepting the Geese, it has always seemed as though their nesting place must be some inaccessible point in far-away Greenland, or some of the Arctic regions, and one by no means likely to be reached by ordinary mortals like myself. However, at last I began to hear of their nests having been found in a small lake, called Island lake about three miles from Stoughton. I knew of a set being taken there one season, so on July 5th, of that year three of us started for Island lake, to lay siege to the Loon's nesting place. We found the Loons there but could find no sign of a nest. Upon inquiry we learned that a farmer living on the border of the lake had taken a set of eggs a few days before, and had placed them under a hen for the purpose of hatching them out. We then visited the farmer who said the story was true, but we could not induce him to sell us the eggs or even show them to us, so we were obliged to return home, no wiser than when we left. Each year after that I heard of a pair of Loons being upon Island lake, but it was not until 1888 that I had the good fortune to find a nest. On May 13th, of that year, I reached the eastern shore of the lake about 4:30 P. M., tired and hungry after a long collecting tour. As I lay on the bank looking out upon the peaceful waters, I saw a pair of Loons swimming around a small grassy spot, perhaps two rods long and a rod wide, and containing about a dozen muskrat huts, out in the lake. I was at once convinced that they had a nest there, and made up my mind that at the earliest opportunity I would visit the lake again and secure their eggs. So on the 20th, just a week from my former visit, I started out with the express determination of bringing a set of Loon's eggs back with me.

This time I went to the north shore of the lake, so as to get a boat. I finally succeeding in borrowing an old fishing boat, which had to be poled along, as one of the oar-locks was broken. There was a strong wind blowing from the south, and although I started out with a good deal of vim and energy, I could make but little headway. In fact, I used up all my strength before I got five rods from shore, and was obliged to pole over into the shelter of the island which gives the lake its name. Poling along until I reached the island, I hauled the boat up on its shore fully convinced that I could not reach the Loon's nest that day. So I wandered around on the island a while, and finally laid down on a hillside where I could watch the grassy spot where I had seen the Loons the week before. As I lay there, I suddenly regained most of my lost strength by seeing the Loons in the same place again. So going to the boat, I started out again, got into the lake, and waded along the shore of the island pulling the boat after me. Then I started for the eastern shore of the lake. With my poling, and the wind blowing me, I landed on the eastern side of the grassy spot. Here I again commenced to wade, and pull the boat after me. I carefully examined each muskrat hut in turn, and had about given up in despair, when I gave a sort of sidelong glance at the farthest hut on the west end of the grass patch, and saw what at first sight appeared to be two turtles. I then gave a good look, when I saw that the object of my search had been found. In a moment I was there and there on an old muskrat hut, only slightly hollowed, and almost on a level with the water were two Loon's eggs. All this time the Loons were swimming around me and making a great fuss at this disturbance of their home. I secured the eggs, and started for the shore, entirely refreshed, contented and happy.

The eggs proved to be fresh, and are before me as I write. They measure 3.38x2.22 and 3.71x2.42 respectively. They are olive-drab in color, spotted and blotched with dark brown. Both eggs are very conspicuous in a cabinet.

Oliver Davie describes the nest and eggs of this species as "Olivaceous-brown, sometimes olivaceous-drab, spotted and blotched with very dark brown, almost exactly oval, occasionally very much lengthened; two or three; 3.50x2.25. Nests in the neighborhood of large lakes and ponds, on some low island or in meadows, where the bird collects a large pile of grasses, sods and weeds in which it forms a hollow about sixteen inches in diameter and four or five inches deep."

Elliott Coues's says: "Eggs two, 3.50x2.25, elongate and pointed, dull greenish-drab, with dark brown spots."

The latter is the better description of the shape of the eggs in my possession. Nor was the nest such as Davie describes. The hollow in the top of the muskrat hut was barely perceptible, and I was astonished that the eggs had not rolled off into the water.

I visited Island lake in 1889, and again in 1890, but could find no Loons, so I think they must have realized that when I found their nesting place they had better seek new quarters.—C. K.

Removing Stains from Eggs.

TRY a piece of felt dipped in Muric acid, of equal dilution, just so as to be damp; all free drops should be wiped off cloth, and then applied carefully to spots.—W. S. B., West Medford, Mass.

The Road to Success.

A PROSPEROUS merchant, in a recent conversation, related how his life was changed by a simple performance of duty.

"I was clerk behind the counter of a large retail store in Boston, at a small salary. I had been out of work some time, and when I secured the position in Boston I was thankful, and made a mental promise that I would perform my duties thoroughly. I had been working for two days with poor success; trade had been quiet, and it was difficult to get any customers. I felt somewhat down-hearted because my counter had been idle for some time. A customer making his appearance, I tried my utmost to effect a sale, but, do what I might, I could not please the man. Everything was either too light or too dark, and if the color was selected for his satisfaction, the 'quality' was not what he desired. I have a quick temper, and at times during the transaction I felt that I could strangle the customer; but I quickly curbed my temper and went at him tooth and nail. I felt that my reputation as a salesman was at stake, and it was a question of conquer or to be conquered. At last I made the sale, and with it came a great satisfaction; but I was not done with the man yet. I wanted to sell him more. He said something about sending his wife around to look at some dress goods. I promised to send samples of new patterns as they arrived. The customer thanked me, and said:

"It has taken you a long time to sell me a few goods. Are all of your customers as hard to please as I?"

"It takes some customers but a short time to make their selections, while others wish to go slower; we are bound to please them all," I answered.

"Does it pay your house to devote so much time to so small a sale?" he inquired again.

"Yes," I replied. "I have taken pains to give you what you want. I know you will find the goods as I say. You will have confidence and come again, and the next time it will not take so long."

"After getting his package he walked out of the store. In three days I mailed samples of the new dress goods to his wife, and the circumstance passed entirely out of my mind. In about a month I was transferred to another counter and received a slight advance in wages. Much to my astonishment, I was taken away from this department after only a month or six weeks' trial, and placed in another position. I could not believe that I was not giving satisfaction, because with each change an increase of wages was made. One morning I was informed that Mr. B. wished to see me. I went to the office with some surprise and fear. I was more surprised when I saw sitting beside my employer my customer of a few months back. He proved to be the moneyed partner of the concern, whose other business interests kept him away from the dry-goods store almost entirely, and he was known to but few of his employees, although he knew that I was a new man as soon as he saw me, and thought to see what metal I was made of. That he was satisfied is proved by his making me a buyer of the several departments where I sold goods. My prosperity began with the tough customer, and now I thank goodness that I got him, and that I did not show my disposition to strangle him."

THE

American Archæological Association.

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 10 Canal Street, Worcester, Mass.; G. L. FANCHER, West Winsted, Conn.

Secretary's Report.

AS I have received no applications for membership there is very little to report. It is to be hoped that the membership of the A. A. A. will increase in the coming winter. If members will each try to secure one or more applications each, it would give the Association quite a lift.

ALBERT B. FARNHAM, *Secretary*.

Washington Notes.

AMONG other articles in the Archæological Department of the Smithsonian Institution is an exhibit illustrating the manufacture of gun-flints, as that nearly extinct industry is at present carried on in England.

Professor W. H. Holmes, an archaeologist of the Smithsonian Institution, spent several days the past fall in the neighborhood of Cumberland, Md., searching for Indian relics. His search was very successful, he having found a number of burying grounds and small mounds, and he intends returning in the spring and making extensive researches.

A short time since the writer examined a peculiar relic which was pronounced by Dr. Thomas Wilson, of the Smithsonian Institution to be an amulet or "Medicine charm." It was shaped like a heart about two inches long and one inch in thickness, made of some hard, dark-colored stone and beautifully polished. Have any other members of the A. A. A. anything similar in their collections? A. B. F.

Catlinite

THE beautiful red stone pipes in the collection of Indian objects are made from a stone called catlinite. We are told by Mr. E. A. Barber that for many generations, the aborigines have procured this material for the great pipe-stone quarry situated on the dividing ridge between the sources of the Mississippi and Minnesota rivers at a place called by the French Coteau des Prairies. This mineral was named after Catlin, the celebrated traveller, who was the first white man permitted by the Indians to visit the quarry. It is a very soft material consisting chiefly of clay. The gray variety contains some argillite, and is not so highly prized as the red, since it cannot be so easily carved. It occurs in veins running through the hard rock, which is extensively quarried for building stone. The Indians of the surrounding country attach a superstitious value to the stone, and they have many fanciful legends to account for the existence of this soft, bright red vein in the hard gritty rock. Every year they make a long journey to procure a supply of it.

A Curious Discovery.

A MOST remarkable archæological relic was recently discovered at Nampa, Idaho, while boring for an artesian well. It was a small female figure about an inch and a half in length, and carved out of a light pumice stone. It was found at the depth of about 320 feet underneath several different strata including one of lava. The genuineness of the image is confirmed by its being coated with a cement of red oxide of iron, in which a few grains of sand still remained embedded. It is impossible to form any estimate of the age of this relic until more can be learned about the geological characteristics of the country where it was found, but if genuine it is undoubtedly of great antiquity, and recalls to mind the famous Calaveras skull of California, which was found in a gold bearing gravel overlaid by an extensive deposit of lava. Mr. S. F. Emmons, of the United States Geological Survey, expresses it as his opinion that the beds from which the image is supposed to have been derived are probably of far greater antiquity than any deposits in which human implements have heretofore been discovered.

A Word of Entreaty.

THE "official editor" would like at this time to make an appeal to all members of the A. A. A. for contributions to this department. Two or three members have had to do all the work in this line during the past year. This is not right. Every one of us can aid his little. Make it a point to send in some contribution, even if a slight one, before the next two months have passed away. It makes no difference if you can not put it in "ship-shape" for publication. Send it along just the same. It will be put in order. Give us facts, experiences, stories of collecting trips, descriptions of finds, etc. If you can't do anything else, ask questions. Be alive, show your interest in the organization.—G. H. R.

Philadelphia, Pa. is noted as being the city where are made fraudulent statette or soapstone objects, Cincinnati takes the lead in the manufacture of Hematite specimens; and I would advise collectors not to buy velies of this material unless the very spot from which they come can be shown. In Richmond, Va. are made from glass, prepared to imitate obsidian, imitations of the beautiful volcanic glass arrow-head found in the North West. Orniagsburg, Pa. furnished some time ago the peculiarly formed arrow head etc, purporting to have been made by the Tuscarora Indian sent all over the country. The writer fortunately put a stop to this scoundrelly business. It does not pay to manufacture frauds.—A. F. B.

Estimating Distances.

IT constantly happens that men detached from the main body of an army are called upon to determine for themselves their distance from an object to be fired at. Experience abundantly proves that soldiers, by continued practice, may learn to estimate distances up to 600 to 800 yards with considerable accuracy by simple, rapid observation. Every soldier is supposed to have good eyesight; he, therefore, after a little practice in sight estimating, learns the following facts:

At thirty yards the white of a man's eye is plainly seen, and the eyes themselves up to eighty yards.

At 100 yards all parts of the body are seen distinctly, slight movements are perceptible, and the minute details of the uniforms can be distinguished.

At 150 yards the brass buttons on the blouse can still be separately distinguished.

At 200 yards the outlines of the face are confused, and the rows of brass buttons look like yellow stripes.

At 300 yards the buttons are no longer visible.

At 400 yards the face is a mere dot, but movements of legs and arms are distinct.

At 600 yards details can no longer be distinguished though the files of a squad, if the light be strong, can be counted.

At 800 yards the men in a squad cannot always be counted, nor their individual movements distinguished.

At 1,000 yards a line of men simply resembles a broad belt; the direction of their march can however be readily determined.

At 1,200 yards infantry can be distinguished from cavalry.

At 2,000 yards a mounted man looks like a mere speck or dot.

The estimating drills are first conducted on smooth, level country, and afterwards on rough, broken ground.

The above drills are supplemented a little later in the season by skirmish practice, when the soldiers are advanced or retreated on the run, before a line of targets the size of men lying down, kneeling and standing, when they load and fire at the sound of a bugle, depending entirely upon their own judgment as to what distance they happen to be from the objects fired at. It teaches them to be quick and observing, and, above all, to depend upon themselves for the manipulation of their sights and the handling of their pieces. The estimating distance drills are usually kept up for two months, when the soldier is practiced indoors at aiming, pointing, and pulling the trigger.

"HOW to Succeed in Business," is the theme that calls forth some very interesting reminiscences by S. S. Packard, in *The Chautauquan*, Meadville, Pa., for January. Both the subject and the subject-matter will hold the attention of all ambitious young readers.

PUZZLEDOM

CONDUCTED BY "FISCO."

Address all communications pertaining to this Department to EDGAR D. MELVILLE, Puzzle Editor PLAIN TALK, 924 Upland Street, Chester, Pa.

Answers to Puzzles that Appeared in the October Number.

No. 1. WATER-MELON.

l
d a n
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n e b
r

No. 3. SUN-DAY.

p
t a n
t o r u s
p a r a d o x
n u d g e
s o e
x

New Puzzles.

No. 1. CHARADE.

The breeze *ones* with a feather,
To lift from the ground;
Then two, *three* us together,
To a place where *wholes* abound.
"BROTHER JONATHAN."

No. 2. SQUARE.

1. To be afraid. 2. A girl's name.
3. Verily. 4. To rove.

"NEMO."

No. 3. ANAGRAM.

When coming to this great place
For business or fun,
If you go at a horse's pace,
Always "tie at Ted's Sun."
"BROTHER JONATHAN."

No. 4. METAGRAM.

Change the initial of to clothe, and
have respectively, a plant, to urge, a lock
of hair.

"NEMO."

No. 5. DIAMOND.

1. A letter. 2. A gardener's tool.
3. A Greek poet. 4. A contraction.
5. A letter. "PAUL PRY."

Prize Winner.

Will P. Winslow, (Folderol), Larone,
Me.

Complete lists of answers were received from Emma L. Hauck, Albert Pennell, "Folderol," W. H. Danforth and "Fancy."

Incomplete lists were received from "Paul Pry," Whitney Livingston, "Malanethon," and Mrs. T. N. McClelland.

The February number will contain a biographical sketch of Mrs. T. N. McClelland, who is an enthusiastic follower of puzzledom.

Prize Contest.

To the subscriber answering the largest number of puzzles, appearing in this department in the issues of January, February and March, (answers to be re-

ceived until April 10, 1891, a prize of a handsome book will be given; a second prize of another book will also be given.

Life and Doings of "Nemo."

Miss Sarah B. Hrbek, was born in Cedar Rapids, Iowa, on the 23d day of August, 1875. Ever since she can remember she has liked reading. She first began to take an interest in the art of puzzling in 1887, and for nearly a year confined herself to only attempting to solve such puzzles as appeared in several departments of papers devoted to Puzzledom. Finally she gained sufficient courage to enter into the field as an active member of the "Mystic Krewe," both as a contributor and solver. In this capacity she remained connected with puzzle departments of several papers, among which may be numbered PLAIN TALK, *The Young Idea*, *The Amateur Press*, (now *The Youths' Press*), and *The American Household*.

For quite a length of time she used the simple "nom-de-plume" of "S. B. H." the initials of her name, but some time ago she adopted "Nemo," as her puzzleistic title.

A department in the *Youths' Guide*, under the name of "Perplexities," is under her guidance. To our knowledge she is the only puzzle editress, which is a distinction to be proud of.

Miss F. B. Hancock, ("Fancy,") Stonington, Conn., was the prize offered by Incognito.

Since writing notices in regard to a proposed National Puzzlers' Association, several puzzlers have notified us of the fact that there is an association of the kind mentioned in existence. If such is the case the organization must have sunk into a state of oblivion, for we have never, during the entire time of our career, heard of it. It certainly needs to be enlivened.

"Folderol" is a new arrival among our ranks. We welcome him with open arms, and sincerely trust that the new career into which he has stepped will prove favorable.

We desire to extend our thanks to "Nemo," "Paul Pry," and "Malanethon," for contributions received.

A chance to make money.

I bought one of Griffith's machines for plating with gold, silver or nickel, and it works to perfection. No sooner did people hear of it than I had more spoons, knives, forks and jewelry than I could plate in a month. The first week I cleared \$31.30, the first month \$167.85, and I think by July first I will have \$1,000 cash, and give my farm considerable attention, too. My daughter made \$27.40 in four days. Any person can get one of these machines by sending \$3 to W. H. Griffith & Co., Zanesville, Ohio, or can obtain circulars by addressing them. You can learn to use the machine in one hour. As this is my first lucky streak, I give my experience, hoping others may be benefited as much as I have been. Yours truly,

M. O. MOREHEAD.

CORRESPONDENCE CLUB.

This Department is established in response to numerous requests from subscribers. All readers are invited to make use of it, remembering the following rules: FIRST—Brevity. SECOND—Clearness of statement. THIRD—Decisive knowledge of what is wanted. FOURTH—The desirability of confining themselves, as much as possible, to questions of interest to others as well as themselves. All questions will be given attention as early as possible, although in some cases more or less delay may be necessary.

Miss E. E. Inslee asked the following questions. Who can answer them?

In Louisiana, we have two birds of vivid red—one with parrot-like beak and top-knot (which I take to be the cardinal grosbeak) the other is smaller, prettier, and has neither parrot-beak nor top-knot. Am I right in my conjecture as to the first? and what is the second? I have two Indian relics about the size of a silver dollar and circular in shape, but not perfectly flat. What are they? I have been told that they are Indian weights. They came from the same country in Mississippi.

R. W. B. Putnam, Ct.—Can you furnish me with a list of addresses of companies who sell newspapers by subscription?—Kenyon News Co., Chicago; Subscription News Co., Chicago and New York; W. H. Moore, Brockport, N. Y.; A. H. Roffe & Co., Brookfield St., Boston.

EXCHANGES.

Exchange notices are inserted free of charge, but it must be understood that we can take no responsibility concerning exchanges effected by means of this department, and will not be liable for expenses incurred. To avoid any misunderstanding in the matter, it would be advisable for those contemplating exchanging to write for particulars to the addresses before sending the articles desired. Notices must be plainly and concisely written, following the general arrangement given below, and on one side of the paper only. Send as often as you please, but not more than one notice for single issue. Notices of more than 40 words not inserted. Free to subscribers only. Notices are not accepted, i. e., a notice can have but one insertion. Exchange notices of reviews, "trashy" novels, etc., not inserted. The publishers reserve the right to decline to insert any notices if they think best. This I not a trade column, but is for the benefit of exchange only.

Jacob Horter, 887 Park Ave., N. Y.—Will exchange European minerals (fine), fossil shells (all kinds); fossils, eggs, Indian curios (all kinds), and X.L.S. Send lists and receive none.

E. R. Holberg, Stamp Dealer, 122 S. 6th St., La Crosse, Wis.—Will exchange printing press, type, cards, scroll saw, magic lantern, views, stamp papers, etc., for best offers in stamps or money. Send stamp for sheets at 50 per cent, and receive a good stamp press.

Ralph Botham, Putnam, Conn.—Stamps to exchange for papers devoted to all kinds of exchange; notes also by bicycle (safety) to exchange for printing press, volumes of papers, magic lantern, and several yearly subscriptions to papers for young people.

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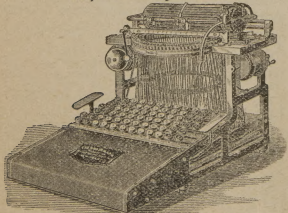


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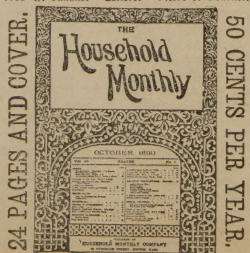
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